General

Title

Atrial fibrillation ablation: rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation.

Source(s)

Heart Rhythm Society (HRS). HRS-12: cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation. Washington (DC): Heart Rhythm Society (HRS); 2015 Nov 17. 15 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Outcome

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation.

This measure is to be reported a minimum of once per reporting period for patients with atrial fibrillation ablation performed during the reporting period. This measure may be reported by clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

This measure will be calculated with 5 performance rates:

Females 18-64 years of age
Males 18-64 years of age
Females 65 years of age and older
Males 65 years of age and older
Overall percentage of patients with cardiac tamponade and/or pericardiocentesis occurring within 30

days

This measure represents the overall rate. Eligible professionals should continue to report the measure as specified, with no additional steps needed to account for multiple performance rates.

Rationale

Cardiac tamponade is one of the most serious complications of atrial fibrillation ablation that can lead to substantial morbidity due to a significant drop in the cardiac output and blood pressure leading to hypo-perfusion of important organs such as the brain, heart and kidneys. In many cases, cardiac tamponade has to be treated surgically, and it invariably prolongs hospital stay. If not treated promptly, cardiac tamponade can lead to death. The risk of this dreaded complication has been reported to range from 2 to 6%; however, these rates were observed in tertiary referral centers where the procedure was performed by experienced and skillful operators. Given that the occurrence of cardiac tamponade is largely dependent on the operator's level of experience and, therefore, is in most cases preventable, higher rates are expected to occur when less experienced operators perform the procedure. These issues prove the need to measure performance in this area.

In recognition that there is an absence of applicable physician-level performance measures for the profession of cardiac electrophysiology, the Heart Rhythm Society (the international professional society focused on the care of patients with heart rhythm disorders) convened a Performance Measures Development Task Force to consider and develop potential physician-level measures cardiac electrophysiologists. The task force consisted of thought leaders in atrial fibrillation ablation, cardiovascular health policy, performance measures development, clinical outcomes, and population science. The process for consideration of the evidence included review of multi-stakeholder professional society clinical expert consensus statements on the topic, such as the 2012 Heart Rhythm Society/European Heart Rhythm Association/European Cardiac Arrhythmia Society Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation (Calkins et al., 2012), and the relevant literature both referenced within this document and in the knowledge of the members of the task force (Cappato et al., 2005; Hsu et al., 2005; Andrade et al., 2011; Bunch et al., 2005; Cappato et al., 2009; Cappato et al., 2010; Cappato et al., 2011; Fisher et al., 2000; Hsu et al., 2003; Latchamsetty et al., 2011; O'Neill et al., 2008; Tsang et al., 2002).

The expert consensus statement does not provide a specific recommendation related to this proposed outcome measure, but rather summarizes that in high-volume and high-quality programs, the incidence of complications in general should be comparable to the low rates of complications observed in published studies, including the world-wide survey of atrial fibrillation ablation (Cappato et al., 2005; Cappato et al., 2009; Cappato et al., 2010; Cappato et al., 2011). Collectively, the incidence of this complication has in general ranged from between 1.2 and 2.4% across the literature evaluated (Cappato et al., 2005; Hsu et al., 2005; Calkins et al., 2012; Andrade et al., 2011; Bunch et al., 2005; Cappato et al., 2009; Cappato et al., 2010; Cappato et al., 2011; Fisher et al., 2000; Hsu et al., 2003; Latchamsetty et al., 2011; O'Neill et al., 2008; Tsang et al., 2002).

Evidence for Rationale

Andrade JG, Khairy P, Guerra PG, Deyell MW, Rivard L, Macle L, Thibault B, Talajic M, Roy D, Dubuc M. Efficacy and safety of cryoballoon ablation for atrial fibrillation: a systematic review of published studies. Heart Rhythm. 2011 Sep;8(9):1444-51.

Bunch TJ, Asirvatham SJ, Friedman PA, Monahan KH, Munger TM, Rea RF, Sinak LJ, Packer DL. Outcomes after cardiac perforation during radiofrequency ablation of the atrium. J Cardiovasc Electrophysiol. 2005 Nov;16(11):1172-9. PubMed

Calkins H, Kuck KH, Cappato R, Brugada J, Camm AJ, Chen SA, Crijns HJ, Damiano RJ Jr, Davies DW, DiMarco J, Edgerton J, Ellenbogen K, Ezekowitz MD, Haines DE, Haissaguerre M, Hindricks G, Iesaka Y, Jackman W, Jalife J, Jais P, Kalman J, Keane D, Kim YH, Kirchhof P, Klein G, Kottkamp H, Kumagai K, Lindsay BD, Mansour M, Marchlinski FE, McCarthy PM, Mont JL, Morady F, Nademanee K, Nakagawa H, Natale A, Nattel S, Packer DL, Pappone C, Prystowsky E, Raviele A, Reddy V, Ruskin JN, Shemin RJ, Tsao HM, Wilber D, Heart Rhythm Society Task Force on Catheter and Surgical Ablation of Atrial Fibrillation. 2012 HRS/EHRA/ECAS expert consensus statement on catheter and surgical ablation of atrial fibrillation: recommendations for patient selection, procedural techniques, patient management and follow-up, definitions, endpoints, and research trial design. Heart Rhythm. 2012 Apr;9(4):632-96.e21. [736 references] PubMed

Cappato R, Calkins H, Chen SA, Davies W, Iesaka Y, Kalman J, Kim YH, Klein G, Natale A, Packer D, Ricci C, Skanes A, Ranucci M. Delayed cardiac tamponade after radiofrequency catheter ablation of atrial fibrillation: a worldwide report. J Am Coll Cardiol. 2011 Dec 13;58(25):2696-7. PubMed

Cappato R, Calkins H, Chen SA, Davies W, Iesaka Y, Kalman J, Kim YH, Klein G, Natale A, Packer D, Skanes A, Ambrogi F, Biganzoli E. Updated worldwide survey on the methods, efficacy, and safety of catheter ablation for human atrial fibrillation. Circ Arrhythm Electrophysiol. 2010 Feb;3(1):32-8. PubMed

Cappato R, Calkins H, Chen SA, Davies W, Iesaka Y, Kalman J, Kim YH, Klein G, Natale A, Packer D, Skanes A. Prevalence and causes of fatal outcome in catheter ablation of atrial fibrillation. J Am Coll Cardiol. 2009 May 12;53(19):1789-803. PubMed

Cappato R, Calkins H, Chen SA, Davies W, Iesaka Y, Kalman J, Kim YH, Klein G, Packer D, Skanes A. Worldwide survey on the methods, efficacy, and safety of catheter ablation for human atrial fibrillation. Circulation. 2005 Mar 8;111(9):1100-5. PubMed

Fisher JD, Kim SG, Ferrick KJ, Gross JN, Goldberger MH, Nanna M. Internal transcardiac pericardiocentesis for acute tamponade. Am J Cardiol. 2000 Dec 15;86(12):1388-9. PubMed

Heart Rhythm Society (HRS). HRS-12: cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation. Washington (DC): Heart Rhythm Society (HRS); 2015 Nov 17. 15 p.

Hsu LF, JaÃ¯s P, Hocini M, Sanders P, ScavÃ©e C, Sacher F, Takahashi Y, Rotter M, Pasquie JL, ClÃ©menty J, HaÃ¯ssaguerre M. Incidence and prevention of cardiac tamponade complicating ablation for atrial fibrillation. Pacing Clin Electrophysiol. 2005 Jan;28 Suppl 1:S106-9. PubMed

Hsu LF, ScavÃ©e C, JaÃ¯s P, Hocini M, HaÃ¯ssaguerre M. Transcardiac pericardiocentesis: an emergency life-saving technique for cardiac tamponade. J Cardiovasc Electrophysiol. 2003 Sep;14(9):1001-3. PubMed

Latchamsetty R, Gautam S, Bhakta D, Chugh A, John RM, Epstein LM, Miller JM, Michaud GF, Oral H, Morady F, Jongnarangsin K. Management and outcomes of cardiac tamponade during atrial fibrillation ablation in the presence of therapeutic anticoagulation with warfarin. Heart Rhythm. 2011 Jun;8(6):805-8. PubMed

O'Neill MD, JaÃ¯s P, Derval N, Hocini M, HaÃ¯ssaguerre M. Two techniques to avoid surgery for cardiac tamponade occurring during catheter ablation of atrial fibrillation. J Cardiovasc Electrophysiol. 2008 Mar;19(3):323-5. PubMed

Tsang TS, Enriquez-Sarano M, Freeman WK, Barnes ME, Sinak LJ, Gersh BJ, Bailey KR, Seward JB. Consecutive 1127 therapeutic echocardiographically guided pericardiocenteses: clinical profile, practice patterns, and outcomes spanning 21 years. Mayo Clin Proc. 2002 May;77(5):429-36. PubMed

Primary Health Components

Atrial fibrillation ablation; cardiac tamponade; pericardiocentesis

Denominator Description

All patients aged 18 years and older with atrial fibrillation ablation performed during the reporting period (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

The number of patients from the denominator with cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

January 1 through November 30 of the reporting period

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All patients aged 18 years and older with atrial fibrillation ablation performed during the reporting period

Denominator Criteria (Eligible Cases):

Reporting Criteria 1: Females 18-64 years old
Reporting Criteria 2: Males 18-64 years old
Reporting Criteria 3: Females 65 years of age and older
Reporting Criteria 4: Males 65 years of age and older

AND

Diagnosis for atrial fibrillation (refer to the original measure documentation for International Classification of Diseases, Tenth Revision, Clinical Modification [ICD-10-CM], International Classification of Diseases, Tenth Revision, Procedure Coding System [ICD-10-PCS] codes)

AND

Diagnosis for atrial fibrillation ablation (refer to the original measure documentation for ICD-10-CM, ICD-10-PCS codes)

AND

Ablation procedures that have been performed by November 30 of current reporting year

Note: Include only patients that have had atrial fibrillation ablation performed by November 30 for evaluation of cardiac tamponade and/or pericardiocentesis occurring within 30 days within the reporting period. This will allow the evaluation of cardiac tamponade and/or pericardiocentesis complications within the reporting year.

Exclusions

None

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
The number of patients from the denominator with cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation

Note: Refer to the original measure documentation for administrative codes.

Exclusions
None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Registry data

Type of Health State

Adverse Health State

Instruments Used and/or Associated with the Measure

2016 Registry Individual Measure Flow: PQRS#392: HRS-12: Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

This measure is reported as four rates stratified by age and gender:

Reporting Age Criteria 1: Females 18-64 years of age
Reporting Age Criteria 2: Males 18-64 years of age
Reporting Age Criteria 3: Females 65 years of age and older
Reporting Age Criteria 4: Males 65 years of age and older

Standard of Comparison

not defined yet

Identifying Information

Original Title

HRS-12: cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation.

Submitter

Heart Rhythm Society - Disease Specific Society

Developer

Heart Rhythm Society - Disease Specific Society

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

Unspecified

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Jun 29

Measure Initiative(s)

Physician Quality Reporting System

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Nov

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

Measure Availability

Source not available electronically.

For more information, contact the Heart Rhythm Society (HRS) at 1325 G Street, NW, Suite 400, Washington, DC 20005; Phone: 202-464-3400; Fax: 202-464-3401; E-mail: info@HRSonline.org; Web site: www.hrsonline.org .

NQMC Status

This NQMC summary was completed by ECRI Institute on June 21, 2016. The information was verified by the measure developer on July 7, 2016.

Copyright Statement

Production

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